

# ABSTRACT OF THE DISCLOSURE

A buck converter is provided for providing an output voltage to a load, the output voltage being produced from an input voltage in accordance with a desired voltage. The buck converter includes  
5 an output capacitor, the output voltage being provided by the output capacitor; a plurality of output switch arrangements having respective output inductors coupled to the output capacitor, the switch arrangements being controllable to provide  
10 respective phase output currents to the output capacitor through the respective output inductors; a plurality of phase output arrangements respectively coupled to the output switch arrangements, the phase output arrangements being controllable to set the respective phase output currents supplied by the output  
15 switch arrangements, each of the phase output arrangements being operable to shutdown the respective output switch arrangement if a signal representing an output current of the buck converter falls below a respective programmable threshold signal; and a  
20 phase control arrangement configured to control the phase output arrangements to set the respective phase output currents supplied by the output switch arrangements so that the output voltage approximates the desired voltage.